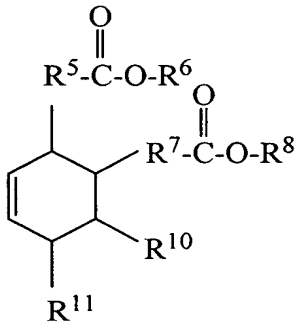
WHAT IS CLAIMED IS:

1. A plasticized thermoplastic composition comprising one or more thermoplastics and a plasticizer compound selected from the group consisting of a dimerate ester plasticizer having formula I, a trimerate ester plasticizer having formula II, and mixtures thereof:

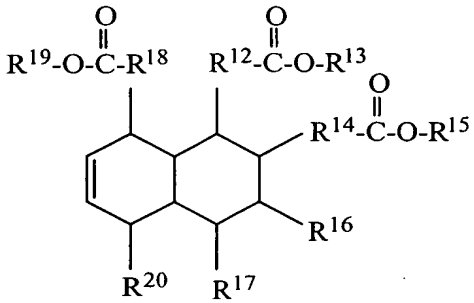


(I)

wherein R^5 and R^7, same or different, are a C_3-C_{24} hydrocarbon chain, straight chain or branched, either saturated or having 1 to 6 carbon-to-carbon double bonds;

R^6 and R^8, same or different, are a C_3-C_{24} alkyl radical, straight chain or branched, saturated or unsaturated containing 1 to 3 carbon-to-carbon double bonds; and

R^{10} and R^{11}, same or different, are a C_3-C_{24} saturated hydrocarbon chain, straight chain or branched, or an unsaturated C_3-C_{24} hydrocarbon chain, straight chain or branched, having 1 to 6 carbon-to-carbon double bonds;



(II)

wherein R^{12}, R^{14} and R^{18}, same or different, are a C_3-C_{24} hydrocarbon chain, straight chain or branched, either saturated or having 1 to 6 carbon-to-carbon double bonds;

R^{13}, R^{15} and R^{19}, same or different, are a C_3-C_{24} alkyl radical, straight chain or branched, saturated or unsaturated containing 1 to 3 carbon-to-carbon double bonds; and

R^{16}, R^{17} and R^{20}, same or different, are a C_3-C_{24} saturated hydrocarbon chain, straight chain or branched, or an unsaturated C_3-C_{24} hydrocarbon chain, straight chain or branched, containing 1 to 6 carbon-to-carbon double bonds.

2. A plasticized thermoplastic composition in accordance with claim 1, wherein:

R^5 and R^7, same or different, are a C_6-C_{24} hydrocarbon chain, straight chain or branched, either saturated or having 1 to 3 carbon-to-carbon double bonds;

R^6 and R^8, same or different, are a C_3-C_{18} alkyl radical, straight chain or branched, saturated or unsaturated containing 1 to 3 carbon-to-carbon double bonds, and

R^{10} and R^{11}, same or different, are a C_3-C_{18} saturated hydrocarbon chain, straight chain or branched, or an unsaturated C_3-C_{18} hydrocarbon chain, straight chain or branched, containing 1 to 3 carbon-to-carbon double bonds;

R^{12}, R^{14} and R^{18}, same or different, are a C_6-C_{24} hydrocarbon chain, straight chain or branched, either saturated or containing 1 to 3 carbon-to-carbon double bonds;

R^{13}, R^{15} and R^{19}, same or different, are a C_3-C_{18} alkyl radical, straight chain or branched, saturated or unsaturated containing 1 to 3 carbon-to-carbon double bonds; and,

R^{16}, R^{17} and R^{20}, same or different, are a C_3-C_{18} saturated hydrocarbon chain, straight chain or branched; or an unsaturated C_3-C_{18} hydrocarbon-chain, straight chain or branched, containing 1 to 3 carbon-to-carbon double bonds.

3. A plasticized thermoplastic composition in accordance with claim 1, wherein the plasticizer compound is present in an amount from about 0.1 parts to about 40 parts by weight per 100 parts of thermoplastic.

4. A plasticized thermoplastic composition in accordance with claim 1, wherein the plasticizer compound is present in an amount from about 0.5 parts to about 20 parts per 100 parts of thermoplastic.

5. A plasticized thermoplastic composition in accordance with claim 1, wherein the plasticizer compound is present in an amount from about 3 parts to about 15 parts per 100 parts of thermoplastic.

6. A plasticized thermoplastic composition in accordance with claim 1, wherein the thermoplastic is selected from the group consisting of polyvinyl chlorides, nylons, propylene/α-olefin copolymers, ethylene/α-olefin copolymers, polyolefins, polystyrenes, acrylic resins, and combinations thereof.

7. A plasticized thermoplastic composition in accordance with claim 1, wherein the thermoplastic is selected from the group consisting of ethylene/propylene copolymers, ethylene/1-octene copolymers, polypropylenes, and combinations thereof.

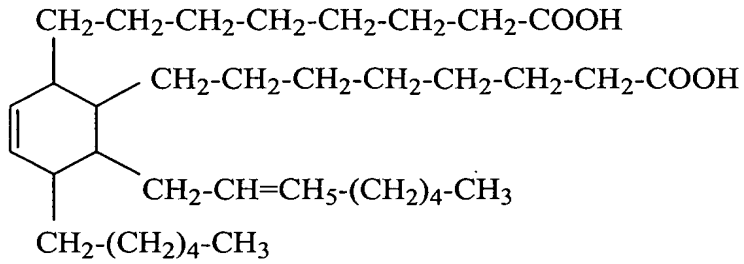
8. A plasticized thermoplastic composition in accordance with claim 1, wherein the plasticizer is an unsaturated diester formed by the reaction of a C_{36} dimer acid and a C_3-C_{18} alcohol, straight chain or branched, saturated or unsaturated containing 1 to 3 carbon-to-carbon double bonds.

9. A plasticized thermoplastic composition in accordance with claim 8, wherein the alcohol is 2-ethylhexyl alcohol.

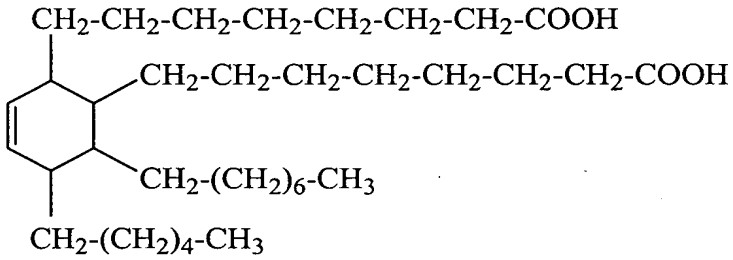
10. A plasticized thermoplastic composition in accordance with claim 8, wherein the alcohol is tridecyl alcohol.

11. A plasticized thermoplastic composition in accordance with claim 8, wherein the alcohol is oleyl alcohol.

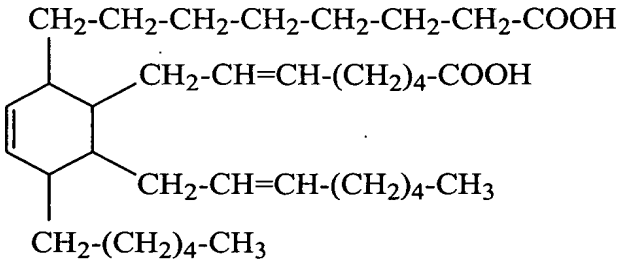
12. A plasticized thermoplastic composition in accordance with claim 1, wherein the plasticizer comprises a reaction product of the following dimer acid reacted with a C_3-C_{24} alcohol:



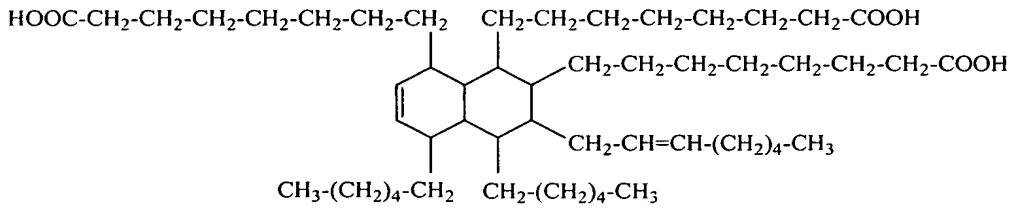
13. A plasticized thermoplastic composition in accordance with claim 1, wherein the plasticizer comprises a reaction product of the following dimer acid reacted with a C_3-C_{24} alcohol:



14. A plasticized thermoplastic composition in accordance with claim 1, wherein the plasticizer comprises a reaction product of the following dimer acid reacted with a C_3-C_{24} alcohol:



15. A plasticized thermoplastic composition in accordance with claim 1, wherein the plasticizer comprises a reaction product of a C_3-C_{24} alcohol reacted with a tricarboxylic acid having the following formula:



16. A plasticized thermoplastic composition in accordance with claim 1, wherein the plasticizer is a mixture of compounds represented by formula I and II.

17. A plasticized thermoplastic composition in accordance with claim 1, wherein the plasticizer is a reaction product of a C_3-C_{24} alcohol, straight chain or branched, saturated or unsaturated having 1 to 3 carbon-to-carbon double bonds, reacted with a dimer acid having CAS # 61788-89-4.

18. A plasticized thermoplastic composition in accordance with claim 17, wherein the alcohol is 2-ethylhexyl alcohol.

19. A plasticized thermoplastic composition in accordance with claim 17, wherein the alcohol is tridecyl alcohol.

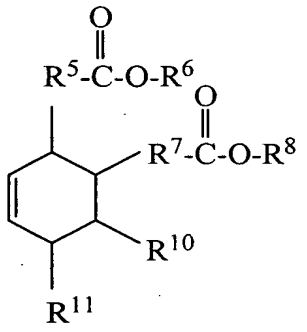
20. A plasticized thermoplastic composition in accordance with claim 17, wherein the alcohol is oleyl alcohol.

21. A plasticized thermoplastic composition in accordance with claim 1, wherein R^5, R^7, R^{12}, R^{14} and R^{18} are fatty acid residues derived from animal or vegetable fatty acids.

22. A plasticized thermoplastic composition in accordance with claim 21, wherein the fatty acids are selected from the group consisting of butter; lard; tallow; grease; herring; menhaden; pilchard; sardine; babassu; castor; coconut; corn; cottonseed; jojoba; linseed; oiticia; olive; palm; palm kernel; peanut; rapeseed; safflower; soya; sunflower; tall; tung; and mixtures thereof.

23. A plasticized thermoplastic composition of claim 22 wherein the fatty acid residues are selected from the group consisting of hexanoic; octanoic; decanoic; dodecanoic; 9-dodecenoic; tetradecanoic; 9-tetradecenoic; hexadecanoic; 9-hexadecenoic; octadecanoic; 9-octadecenoic; 9, 12-octadecadienoic; 9, 12, 15-octadecatrienoic; 9, 11, 13-octadecatrienoic; octadecatetrenoic; eicosanoic; 11-eicosenoic; eicosadienoic; eicosatrienoic; 5, 8, 11, 14-eicosatetraenoic; eicosapentaenoic; docosanoic; 13-docosenoic; docosatetraenoic; 4, 8, 12, 15, 19-docosapentaenoic; docosahexaenoic; tetracosenoic; and 4, 8, 12, 15, 18, 21-tetracosahexaenoic.

24. A method of plasticizing a thermoplastic composition including one or more thermoplastics, comprising adding to said thermoplastic composition, in an amount of about 0.1 parts to about 40 parts by weight per 100 parts of thermoplastic, a plasticizer compound selected from the group consisting of a cyclic dimerate ester plasticizer having formula I, a trimerate ester plasticizer having formula II, and mixtures thereof:

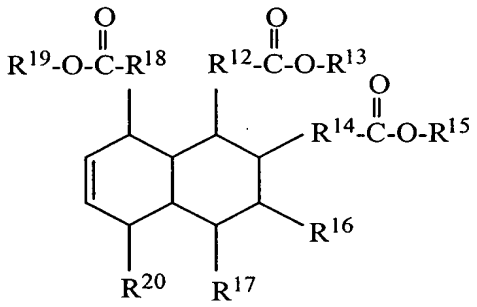


(I)

wherein R^5 and R^7, same or different, are a C_3-C_{24} hydrocarbon chain, straight chain or branched, either saturated or having 1 to 6 carbon-to-carbon double bonds;

R^6 and R^8, same or different, are a C_3-C_{24} alkyl radical, straight chain or branched, saturated or unsaturated containing 1 to 3 carbon-to-carbon double bonds; and

R^{10} and R^{11}, same or different, are a C_3-C_{24} saturated hydrocarbon chain, straight chain or branched, or an unsaturated C_3-C_{24} hydrocarbon chain, straight chain or branched, having 1 to 6 carbon-to-carbon double bonds;



(II)

wherein R^{12}, R^{14} and R^{18}, same or different, are a C_3-C_{24} hydrocarbon chain, straight chain or branched, either saturated or having 1 to 6 carbon-to-carbon double bonds;

R^{13}, R^{15} and R^{19}, same or different, are a C_3-C_{24} alkyl radical, straight chain or branched, saturated or unsaturated containing 1 to 3 carbon-to-carbon double bonds; and

R^{16}, R^{17} and R^{20}, same or different, are a C_3-C_{24} saturated hydrocarbon chain, straight chain or branched, or an unsaturated C_3-C_{24} hydrocarbon chain, straight chain or branched, containing 1 to 6 carbon-to-carbon double bonds.

25. A method in accordance with claim 24, wherein the plasticizer compound is added in an amount from about 0.5 parts to about 25 parts by weight per 100 parts of thermoplastic.

26. A method in accordance with claim 24, wherein the plasticizer compound is added in an amount from about 3 parts to about 15 parts per 100 parts of thermoplastic.